

## **APPARATUS AND METHOD FOR BOARDING ANIMALS INTO A BOAT**

### **BACKGROUND OF THE INVENTION**

Pet owners frequently enjoy taking their animals along with them on recreational excursions. Sometimes, the animals even play a specific role in the recreation, such as hunting dogs that retrieve birds; other times, the animals are merely along for the ride. In either case, pet owners occasionally find themselves accompanied by their animals on boat rides, and the animals likewise occasionally find themselves in the water. Most animals have a great deal more difficulty transitioning from the water back into the boat than the other way around, and require assistance in their efforts to get back into the boat. Usually, this means a person (either the pet owner or an exceptionally generous good sport ) has to lean into the water, grab the (often struggling) animal, and hoist the now-soaking-wet animal into the boat. As might be imagined, the retrieval process is awkward, cumbersome, messy and wet.

There are currently several known ladder and/or ramp devices for allowing animals to reboard a boat under their own power and without human assistance. These include devices described in prior art patents such as US 3891053 to Burton, 4538314 to Baranowski, 4724925 to Ritten and 5592801 to Balzer. These designs, while advances over the above-described reboarding technique, all suffer

from the drawbacks of being overly bulky, complicated, difficult to attach and detach to/from the boat, and/or not universally adaptable to different boat designs. Thus, there remains a need for a mechanism for facilitating animal travel between the boat and the water that is easily carried and readily attached to most boat designs.

## **SUMMARY OF THE INVENTION**

The present invention relates to a device for attachment to a boat for boarding animals thereinto. The device includes an elongated ramp member having a proximal end portion and a central body portion, a support member extending from the proximal end and engagedly abutting a first portion of the boat, a strut extending from the central portion and abutting a second portion of the boat, and a gripping assembly connected to the support member for releasably engaging the boat.

One object of the present invention is to provide an improved system for transporting animals between a boat and the water. Related objects and advantages of the present invention will be evident from the following descriptions.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

FIG. 1 is a side plan view of a first embodiment of the apparatus of the present invention engaged to a boat ladder.

FIG. 2 is a side cutaway view of the apparatus of Fig. 1.

FIG. 3 is an enlarged partial view of the top portion of the embodiment of FIG. 1.

FIG. 4 is schematic view of the support assembly of the embodiment of FIG. 1.

FIG. 5 is bottom plan view of the embodiment of FIG. 1.

FIG. 6 is a perspective view of the embodiment of FIG. 1

FIG. 7A is first perspective view of a dog beginning to use the embodiment of FIG. 1 to board a boat from the water.

FIG. 7B is a second perspective view of a dog using the embodiment of FIG 1 to board a boat from the water.

FIG. 7C is a third perspective view of a dog using the embodiment of FIG 1 to board a boat from the water.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS**

For the purposes of promoting an understanding of the principles of the invention and presenting its currently understood best mode of operation, reference will now be made to the embodiments illustrated in the drawings and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, with such alterations and further modifications in the illustrated device and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

FIGS. 1-6 illustrate a first preferred embodiment of the present invention, a boat boarding device 10 for facilitating the boarding of a boat by ambulatory animals, such as dogs or cats, from the water into a boat. The device 10 includes an elongated ramp or ladder member 12 connectable to a boat ladder 13 via a support assembly 14 connected to the ramp member 12 near one end (for convenience, designated the proximal end of the ramp member 12.) Specifically, the support assembly includes a connection assembly 16 for engaging the device 1- to the boat ladder 13. For convenience, the device further includes a positioning or strut assembly 18 extendable from the ramp 12 to engage the boat ladder 13 or other fixture of a boat to determine the angle between the boat ladder 13 and the ramp 12. The ramp preferably includes a plurality of stair-steps 15 formed therein, and the stair steps more preferably have slightly concave surfaces, such that even when the ramp 12 is deployed at a relatively steep angle, an animal traversing the ramp 12 will enjoy maximixed stability of footing.

FIG. 3 and 4 illustrate the support assembly 14 in greater detail. The support assembly 14 includes a crossbeam 19 from which at least one, and more preferably two, hooked support

members 20 depend. The support members 20 are preferably pivotally connected and more preferably slidably connected at one end to the crossbeam 19 and terminate in a (preferably C-shaped) hook member 22 at the other end. The support members 20 may thus pivot relative the crossbeam 19 as well as slide along the length of the crossbeam 19. By slidably positioning the support members 20, the connection assembly 14 may be adjusted to fit boat ladders 13 of a continuum of widths and sizes. In one contemplated embodiment, the connection assembly further includes sliding position markers or stops (not shown) for indicating a preferred position to which the support members 20 should be moved along the crossbeam for engaging a preferred boat ladder 13. The hook member 22 is preferably sized to engagingly receive a top ladder rung 26, i.e. a cylinder with a diameter ranging from about  $\frac{3}{4}$  to about 3 inches. The support assembly 14 is preferably connected to the ramp 12 by pivoting connection pin 24 extending through an aperture in the ramp 12. Alternately, the support assembly 14 may be connected to the ramp via any convenient means, such as through the engagement of the ends of the crossbeam 19 into cavities formed in the ramp 12 to engagingly receive the crossbeam, or the like.

The support assembly 14 further includes a connection assembly 16 for engaging the device 10 to a boat ladder frame 30. The connection assembly 16 includes at least one, and more preferably two, pivotable gripping members 32 coupled to the respective support members 20. A first biasing member 34 is operationally connected between the support member and the gripping member 32 to urge the gripping member to move or pivot in a first direction (preferably to orient the gripping member substantially perpendicular to the support member.) In other words, the first biasing member 34 functions to extend the gripping member 32 outwardly away from the support member 20, such that when the device 10 and connection assembly 16 is positioned against a ladder frame 30, the respective gripping members 32 extend behind the ladder frame 30

to wedgingly connect the device 10 to the frame 30. Pivoting a respective gripping members 32 in the first direction thus position the ladder frame 30 generally between the respective gripping member 32 and the support member 20 to wedge or affix the device 10 to the boat ladder 13.

The connection assembly 16 further includes a second biasing member 36 connected to each respective gripping member 32, such that actuation of the second biasing member 26 urges the respective gripping member 32 to move or pivot in a second direction opposite the first direction. Thus, actuation of the second biasing member 36 urges the gripping member 32 to release an engaged ladder 19 portion and actuates removal of the device 10 from the ladder 19. Preferably, the second biasing member 36 is a flexible connector, such as a lanyard member, connected to each respective second biasing member 36 and extending away therefrom. Movement of the lanyard member 36 away from the gripping member(s) 32 thus actuates their movement in the second direction.

As illustrated in greater detail in FIG. 1, 2 and 5, the device 10 also includes a positioning or strut assembly 18 for defining the contact angle between the ramp 12 and the boat (and/or boat ladder 13.) The strut assembly 18 includes a first elongated strut 40 and a second elongated strut 42, each respective strut 40, 42 independently connectable to the ramp 12 via a plurality of spaced apertures 44 formed therethrough. The first and second struts 40, 42 each include a respective first and second pivotable connecting pin 46, 48 extending from one end (for convenience, the proximal end), and are preferably joined at their respective other ends (for convenience, the distal ends) by a coupling connector 50. The coupling connector 50 is preferably a pivoting connector, such that the struts 40, 42 may be moved relative each other through a continuum of angles. Engagement of the struts 40, 42 to the ramp 12 via insertion of the respective pins 46, 48 each into a respective one of the plurality of apertures 44 generally

defines a triangle with a respective strut 40, 42 and the ramp 12 each comprising a side. The selection of the position of the apertures 44 into which the pins 46, 48 are inserted determined the internal angles of the triangle, which in turn determines the angle between the ramp 12 and the boat ladder 13. One of the struts 40, 42 (preferably the first elongated strut 40) further includes an elongated boat ladder engaging member 54 connected to its distal end and oriented perpendicular thereto to abuttingly engage the boat ladder from when the connecting assembly 16 is engaged thereto and the struts 40, 42 are engaged to the ramp 12.

Preferably, as seen in FIG. 5, each elongated strut member 40, 42 further comprises a pair of substantially identical elongated struts/positioning members 40A-B, 42A-B. More preferably, boat ladder engaging member 54 extends between the first pair of elongated positioning members 40A-B.

In operation, the device 10 is connected to a boat (preferably to a boat ladder 13) by pivoting the gripping members 32 in the second direction, positioning the connection assemble adjacent the boat ladder 13 such that the hooked member 22 abuttingly receives the top rung 26 of the boat ladder 13 and the ladder frame is adjacent 30 the support member 20. The gripping member 32 is then pivoted in the first direction such that the ladder frame 30 is snugly engaged between the gripping member 32 and the support member 20. \

The angle defined between the ramp member 12 and the boat ladder 13 (and, more generally, the boat) is determined by the selection of apertures 44 into which pins 46, 48 are inserted. If pins 46, 48 are inserted into apertures 44 spaced relatively close together, the angle between the ramp member 12 and the boat ladder 13 will be relatively great (and, conversely, the ramp member 12 will extend below the horizontal waterline at a relatively shallow angle;) if pins 46, 48 are inserted into apertures spaced relatively far apart, the angle between the ramp member



12 and the boat ladder 13 will be relatively small (and, conversely, the ramp member will extend below the horizontal waterline at a relatively steep angle.) Likewise, if the positions of the apertures 44 into which pins 46, 48 are inserted are relatively close to the proximal end of the ramp member 12, the angle between the ramp member 12 and the boat ladder 13 will be relatively great (and, conversely, the ramp member will extend below the horizontal waterline at a relatively shallow angle;) if pins 46, 48 are inserted into apertures spaced relatively far from the proximal end of the ramp member 12, the angle between the ramp member 12 and the boat ladder 13 will be relatively small (and, conversely, the ramp member 12 will extend below the horizontal waterline at a relatively steep angle.)

The device 10 is removed from engagement with the boat ladder 13 by pivoting the gripping members 32 in the second direction to release the boat ladder 13 (or whatever fixture of the boat the device 10 is engaged to.) This is accomplished by actuating the second biasing member(s) 32 to urge the gripping member(s) to pivot in the second direction. In the preferred embodiment, the gripping member(s) 32 is/are pivoted in the second direction by exerting a force on the second biasing member 36 to move the second biasing member 36 in a direction away from the gripping member(s) 32, thus transmitting a force onto the gripping member(s) 32 urging pivoting in the second direction. Once disengaged, the device 10 may be folded relatively flat (as shown in FIG. 2) for transport and storage.

Once deployed, the device 10 may be used by swimming or otherwise overboard ambulatory animals as a means for (re)boarding the boat from the water under their own power. As shown in FIGs. 7A-C, an animal in the water (shown as a dog, but representative of any ambulatory animal) may board the boat by simply locating and walking up the ramp member 12 into the boat.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character. It is understood that the embodiments have been shown and described in the foregoing specification in satisfaction of the best mode and enablement requirements. It is understood that one of ordinary skill in the art could readily make a nigh-infinite number of insubstantial changes and modifications to the above-described embodiments and that it would be impractical to attempt to describe all such embodiment variations in the present specification. Accordingly, it is understood that all changes and modifications that come within the spirit of the invention are desired to be protected.